

SEQUENCE.TXT
SEQUENCE LISTING

<110> Tours Nestlé Research Center

<120> Implication Of Proteinase And Proteinase Inhibitor In Coffee Flavour

<130> Patent Proteinase and Proteinase Inhibitor Coffee

<160> 16

<170> PatentIn version 3.1

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<222> (1)..(1543)

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<222> (122)..(1315)

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CONFIRMATION COPY

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<213> Coffea canephora

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Tyr	Pro	Tyr
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Lys	285	

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SEQUENCE.TXT

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Val Pro Lys Val Tyr Asp Ala Ile Val Val Val Arg Pro Trp Val His			
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SEQUENCE.TXT

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Gly Thr Thr Leu Ala Tyr Leu Pro Asp Asp Val Tyr Thr Pro Leu Met
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Glu Lys Ile Thr Ala Ser Gln Ser Asn Leu Lys Ile His Ile Val Glu
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Pro His Glu Tyr Leu Phe Asp Leu His Asp Asp Gln Trp Cys Ile Gly
 325 330 335

Trp Gln Asn Lys Gly Met Gln Thr Arg Asp Gly Arg Glu Val Thr Leu
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Asn Gln Thr Ile Gly Trp Ala Glu Tyr Asn Cys Ser Ser Ser Ile Lys
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SEQUENCE.TXT

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<221> CDS

<222> (79)..(1602)

<223>

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1 5 10	
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Leu Gly Ala Ile Val Cys Ser Leu Phe Pro Leu Pro Ser Glu Gly Leu	
15 20 25	
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Lys Arg Ile Ser Leu Lys Lys Lys Pro Leu Asp Ile Gln Ser Ile Arg	
30 35 40	
gct gcc aaa tta gct cat ctg gag agc aca cat ggc gct ggt agg aaa	255
Ala Ala Lys Leu Ala His Leu Glu Ser Thr His Gly Ala Gly Arg Lys	
45 50 55	
gag atg gac aac aat tta ggc agt tcc aat gag gac ata ttg cct tta	303
Glu Met Asp Asn Asn Leu Gly Ser Ser Asn Glu Asp Ile Leu Pro Leu	
60 65 70 75	
aag aat tac ctg gat gcc cag tac tat gga gag att gga att ggt act	351

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tgg Trp	gtg Val	cca Pro 110	tcg Ser	gca Ala	aaa Lys	tgt Cys	tac Tyr 115	ttc Phe	tct Ser	att Ile	gcc Ala	tgc Cys 120	tgg Trp	ctc Leu	cac His
tcc Ser	aag Lys 125	tac Tyr	aag Lys	gca Ala	aag Lys	aag Lys 130	tca Ser	agt Ser	act Thr	tat Tyr	aca Thr 135	gcc Ala	ata Ile	ggg Gly	aaa Lys
tct Ser 140	tgt Cys	tca Ser	att Ile	cgt Arg	tat Tyr 145	ggt Gly	tct Ser	gga Gly	tca Ser	att Ile 150	tct Ser	gga Gly	ttc Phe	tcc Ser	agt Ser 155
cag Gln	gat Asp	aac Asn	gtt Val	gaa Glu 160	gtt Val	ggt Gly	gat Asp	ctt Leu	gtt Val 165	gtc Val	aaa Lys	gat Asp	caa Gln	gtt Val 170	ttt Phe
att Ile	gaa Glu	gct Ala	tca Ser 175	cga Arg	gaa Glu	gga Gly	agt Ser	ctt Leu 180	aca Thr	ttt Phe	gta Val	att Ile	gcc Ala 185	aag Lys	ttt Phe
gac Asp	ggg Gly	ata Ile 190	ctt Leu	ggc Gly	ctt Leu	gga Gly	ttc Phe 195	cag Gln	gag Glu	atc Ile	gct Ala	gtt Val 200	gat Asp	aac Asn	atg Met
gtg Val	ccg Pro 205	gtc Val	tgg Trp	tat Tyr	aat Asn	atg Met 210	gtg Val	gac Asp	caa Gln	ggt Gly	ctc Leu 215	gtg Val	gat Asp	gag Glu	caa Gln
gta Val 220	ttc Phe	tct Ser	ttc Phe	tgg Trp	ctt Leu 225	aac Asn	cgc Arg	gac Asp	cca Pro	aat Asn 230	gct Ala	gaa Glu	gac Asp	gga Gly	ggt Gly 235
gag Glu	ctg Leu	gtc Val	ttt Phe	ggt Gly 240	ggt Gly	gta Val	gat Asp	aca Thr	aat Asn 245	cac His	ttc Phe	aag Lys	gga Gly	aag Lys 250	cat His
aca Thr	tat Tyr	gtt Val	cct Pro 255	gta Val	act Thr	cag Gln	aag Lys	gga Gly 260	tac Tyr	tgg Trp	caa Gln	ttt Phe	aaa Lys 265	atg Met	gga Gly
gat Asp	ttt Phe	ctc Leu 270	att Ile	ggg Gly	aac Asn	gtc Val	tca Ser 275	aca Thr	ggc Gly	ttt Phe	tgt Cys	gaa Glu 280	gga Gly	ggt Gly	tgt Cys
gct Ala	gct Ala 285	att Ile	gtg Val	gac Asp	tct Ser	gga Gly 290	aca Thr	tcg Ser	ttg Leu	ctc Leu	gct Ala 295	ggt Gly	cca Pro	act Thr	act Thr
gtt Val 300	gtg Val	act Thr	caa Gln	att Ile	aat Asn 305	cat His	gcc Ala	att Ile	gga Gly	gct Ala 310	gaa Glu	gga Gly	gta Val	gtt Val	agc Ser 315
act Thr	gaa Glu	tgt Cys	aaa Lys	gaa Glu 320	att Ile	gtt Val	tca Ser	cag Gln	tat Tyr 325	ggt Gly	gaa Glu	ctg Leu	att Ile	tgg Trp 330	gat Asp

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SEQUENCE.TXT

ctc	ctc	gta	tca	ggg	gta	cta	ccc	gac	aga	ggt	tgt	aaa	caa	gct	ggt	1119
Leu	Leu	Val	Ser	Gly	Val	Leu	Pro	Asp	Arg	Val	Cys	Lys	Gln	Ala	Gly	
			335					340					345			
tta	tgt	ccc	ctt	cgt	ggt	gct	cag	cat	gag	aat	gct	tat	atc	aag	tca	1167
Leu	Cys	Pro	Leu	Arg	Gly	Ala	Gln	His	Glu	Asn	Ala	Tyr	Ile	Lys	Ser	
		350					355					360				
gtc	gtc	gac	gag	gag	aac	aag	gag	gaa	gct	tct	ggt	ggt	gaa	tcc	ccg	1215
Val	Val	Asp	Glu	Glu	Asn	Lys	Glu	Glu	Ala	Ser	Val	Gly	Glu	Ser	Pro	
	365					370					375					
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Met	Cys	Thr	Ala	Cys	Glu	Met	Ala	Val	Val	Trp	Met	Gln	Asn	Gln	Leu	
380					385					390					395	
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Lys	Gln	Gln	Gly	Thr	Lys	Glu	Lys	Val	Leu	Ala	Tyr	Val	Asn	Gln	Leu	
			400					405						410		
tgt	gaa	agc	ata	cca	agt	ccc	atg	gga	gaa	tcc	atc	att	gac	tgc	aac	1359
Cys	Glu	Ser	Ile	Pro	Ser	Pro	Met	Gly	Glu	Ser	Ile	Ile	Asp	Cys	Asn	
			415					420					425			
agt	tta	tcc	acc	ctg	cca	aat	gtt	tca	ttc	acc	atc	gga	ggg	aaa	agt	1407
Ser	Leu	Ser	Thr	Leu	Pro	Asn	Val	Ser	Phe	Thr	Ile	Gly	Gly	Lys	Ser	
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Phe	Glu	Leu	Thr	Leu	Lys	Glu	Tyr	Val	Leu	Arg	Thr	Gly	Glu	Gly	Phe	
	445					450					455					
gct	gaa	gtc	tgc	atc	agt	gga	ttc	atg	gct	atg	gat	gtg	ccg	ccg	cct	1503
Ala	Glu	Val	Cys	Ile	Ser	Gly	Phe	Met	Ala	Met	Asp	Val	Pro	Pro	Pro	
460					465					470					475	
cgt	ggt	ccc	atc	tgg	gtt	ctg	gga	gat	gtg	ttc	atg	gga	gtg	tac	cac	1551
Arg	Gly	Pro	Ile	Trp	Val	Leu	Gly	Asp	Val	Phe	Met	Gly	Val	Tyr	His	
				480					485					490		
acc	gtg	ttt	gat	tat	ggt	aat	ctc	cgg	atg	ggt	ttc	gca	aga	gct	gct	1599
Thr	Val	Phe	Asp	Tyr	Gly	Asn	Leu	Arg	Met	Gly	Phe	Ala	Arg	Ala	Ala	
			495					500					505			
tag	aca	gactgt	ttatttcg	tc	tactgtttga	cggtcctaag	agaagctatg									1652
aagacatgta	gtagcttgta	aattaggatt	taattatgct	tggctggttt	atgggtgggtg											1712
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<210> 8

<211> 507

<212> PRT

<213> Coffea canephora

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<400> 8

SEQUENCE.TXT

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20      25      30
Lys Lys Lys Pro Leu Asp Ile Gln Ser Ile Arg Ala Ala Lys Leu Ala
35      40      45
His Leu Glu Ser Thr His Gly Ala Gly Arg Lys Glu Met Asp Asn Asn
50      55      60
Leu Gly Ser Ser Asn Glu Asp Ile Leu Pro Leu Lys Asn Tyr Leu Asp
65      70      75      80
Ala Gln Tyr Tyr Gly Glu Ile Gly Ile Gly Thr Pro Pro Gln Lys Phe
85      90      95
Thr Val Ile Phe Asp Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Ala
100     105     110
Lys Cys Tyr Phe Ser Ile Ala Cys Trp Leu His Ser Lys Tyr Lys Ala
115     120     125
Lys Lys Ser Ser Thr Tyr Thr Ala Ile Gly Lys Ser Cys Ser Ile Arg
130     135     140
Tyr Gly Ser Gly Ser Ile Ser Gly Phe Ser Ser Gln Asp Asn Val Glu
145     150     155     160
Val Gly Asp Leu Val Val Lys Asp Gln Val Phe Ile Glu Ala Ser Arg
165     170     175
Glu Gly Ser Leu Thr Phe Val Ile Ala Lys Phe Asp Gly Ile Leu Gly
180     185     190
Leu Gly Phe Gln Glu Ile Ala Val Asp Asn Met Val Pro Val Trp Tyr
195     200     205
Asn Met Val Asp Gln Gly Leu Val Asp Glu Gln Val Phe Ser Phe Trp
210     215     220
Leu Asn Arg Asp Pro Asn Ala Glu Asp Gly Gly Glu Leu Val Phe Gly
225     230     235     240
Gly Val Asp Thr Asn His Phe Lys Gly Lys His Thr Tyr Val Pro Val

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CONFIRMATION COPY

SEQUENCE.TXT																	
245								250								255	
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Asn	Val	Ser 275	Thr	Gly	Phe	Cys	Glu 280	Gly	Gly	Cys	Ala	Ala 285	Ile	Val	Asp		
Ser	Gly 290	Thr	Ser	Leu	Leu	Ala 295	Gly	Pro	Thr	Thr	Val 300	Val	Thr	Gln	Ile		
Asn 305	His	Ala	Ile	Gly	Ala 310	Glu	Gly	Val	Val	Ser 315	Thr	Glu	Cys	Lys	Glu 320		
Ile	Val	Ser	Gln	Tyr 325	Gly	Glu	Leu	Ile	Trp 330	Asp	Leu	Leu	Val	Ser 335	Gly		
Val	Leu	Pro	Asp 340	Arg	Val	Cys	Lys	Gln 345	Ala	Gly	Leu	Cys	Pro 350	Leu	Arg		
Gly	Ala	Gln 355	His	Glu	Asn	Ala	Tyr 360	Ile	Lys	Ser	Val	Val 365	Asp	Glu	Glu		
Asn	Lys 370	Glu	Glu	Ala	Ser	Val 375	Gly	Glu	Ser	Pro	Met 380	Cys	Thr	Ala	Cys		
Glu 385	Met	Ala	Val	Val	Trp 390	Met	Gln	Asn	Gln	Leu 395	Lys	Gln	Gln	Gly	Thr 400		
Lys	Glu	Lys	Val	Leu 405	Ala	Tyr	Val	Asn	Gln 410	Leu	Cys	Glu	Ser	Ile 415	Pro		
Ser	Pro	Met	Gly 420	Glu	Ser	Ile	Ile	Asp 425	Cys	Asn	Ser	Leu	Ser 430	Thr	Leu		
Pro	Asn	Val 435	Ser	Phe	Thr	Ile	Gly 440	Gly	Lys	Ser	Phe	Glu 445	Leu	Thr	Leu		
Lys	Glu 450	Tyr	Val	Leu	Arg	Thr 455	Gly	Glu	Gly	Phe	Ala 460	Glu	Val	Cys	Ile		
Ser 465	Gly	Phe	Met	Ala	Met 470	Asp	Val	Pro	Pro	Pro 475	Arg	Gly	Pro	Ile	Trp 480		
Val	Leu	Gly	Asp	Val 485	Phe	Met	Gly	Val	Tyr 490	His	Thr	Val	Phe	Asp 495	Tyr		

CONFIRMATION COPY

Gly Asn Leu Arg Met Gly Phe Ala Arg Ala Ala
 500 505

SEQUENCE.TXT

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 <211> 726
 <212> DNA
 <213> Coffea canephora

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 agagcagggt gttgctggta ccgtgtacta tctgaccatt gaggtgaaag atgggaatga 300
 gaagaagctt tatgaggcca aagtttgggt gaagccatgg ttgaacttca aggaggttca 360
 agaattcaag cctgctgctg gtgatactag tgcctaaatt tgcttcttaa caatgcgcta 420
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 ggagtttcaa acatgcttag tttgtatatg ctataactcg taatattaac atgttagtaa 540
 catgttatct tatgttggat agatgttaag accaacataa tcttcgctga tgttcggttc 600
 gatgtgatct gatcctgtgg tttttatacc actctggcct gagtatcatt acccttagtc 660
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 aaaaaa 726

<210> 10
 <211> 98
 <212> PRT
 <213> Coffea canephora

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 20 25 30
 Lys Gln Asn Ala Leu Leu Glu Phe Gln Lys Val Ile Asn Ser Lys Glu

SEQUENCE.TXT

35

40

45

Gln Val Val Ala Gly Thr Val Tyr Tyr Leu Thr Ile Glu Val Lys Asp
 50 55 60

Gly Asn Glu Lys Lys Leu Tyr Glu Ala Lys Val Trp Val Lys Pro Trp
 65 70 75 80

Leu Asn Phe Lys Glu Val Gln Glu Phe Lys Pro Ala Ala Gly Asp Thr
 85 90 95

Ser Ala

<210> 11

<211> 688

<212> DNA

<213> Coffea canephora

<400> 11

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 ccaccctggc agctatctgt cttttctccg acgtcccttc cgcggctttg ggtggctgcc 180
 ccaaagatgc cttagtcggc ggttgaggta aggctgacct caaggacca gaggtgctag 240
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 aaactgtggt ggaggcgcag aagcaagtgg tggccggcac aaattacaag attgtgataa 360
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 ataagcatgt gcatttcttg cttaaaactg tggcatgaga ggtgtatgta taatcatctg 540
 tatttcttgc ttaaaactgt ggtatgacta tgagagatgt ttgaagtgta ctgtactaca 600
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<211> 124

<212> PRT

<213> Coffea canephora

SEQUENCE.TXT

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Ile Cys Leu Phe Ser Asp Val Pro Ser Ala Ala Leu Gly Gly Arg Pro
 20 25 30

Lys Asp Ala Leu Val Gly Gly Trp Ser Lys Ala Asp Pro Lys Asp Pro
 35 40 45

Glu Val Leu Glu Asn Gly Lys Phe Ala Ile Asp Glu His Asn Lys Glu
 50 55 60

Ala Gly Thr Lys Leu Glu Phe Lys Thr Val Val Glu Ala Gln Lys Gln
 65 70 75 80

Val Val Ala Gly Thr Asn Tyr Lys Ile Val Ile Lys Ala Leu Asp Gly
 85 90 95

Thr Ala Ser Asn Leu Tyr Glu Ala Ile Val Trp Val Lys Pro Trp Leu
 100 105 110

Lys Phe Lys Lys Leu Thr Ser Phe Arg Lys Leu Pro
 115 120

<210> 13

<211> 697

<212> DNA

<213> Coffea canephora

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cagaaaaaca tgggtgggtgg tgggtctaagc tctactgttc ctctctgata gtcaaccgtc	180
aacccgaaag accctcacgt gattcagatc gcacaatttg cagttgcaaa ctacaacgcg	240
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gacacttact acatgcttgc cattaact caggatctta cgggcacaca ttgcgacgta	360
gcattgggtc gtgaaatata ggagagcaat ggtacttata gcctcaaata gtacaatcat	420
aacaataagt gaccacgcac tactcttgat cagctgagga tcaatgactt taattatata	480

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SEQUENCE.TXT

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<210> 14

<211> 119

<212> PRT

<213> Coffea canephora

<400> 14

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Gln	Lys	Asn	Met	Val	Gly	Gly	Gly	Leu	Ser	Ser	Thr	Val	Pro	Pro	Arg
		20						25					30		

Ser	Ser	Thr	Val	Asn	Pro	Lys	Asp	Pro	His	Val	Ile	Gln	Ile	Ala	Gln
		35					40					45			

Phe	Ala	Val	Ala	Asn	Tyr	Asn	Ala	Lys	Ala	Gly	Thr	Thr	Val	Val	Trp
	50					55					60				

Leu	Asn	Val	Glu	Tyr	Gly	Phe	Trp	Trp	Ile	Asp	Asp	Asp	Thr	Tyr	Tyr
65					70					75					80

Met	Leu	Ala	Ile	Lys	Thr	Gln	Asp	Leu	Thr	Gly	Thr	His	Cys	Asp	Val
				85					90					95	

Ala	Leu	Val	Arg	Glu	Ile	Ser	Glu	Ser	Asn	Gly	Thr	Tyr	Ser	Leu	Lys
			100					105					110		

Trp	Tyr	Asn	His	Asn	Asn	Lys
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<210> 15

<211> 1367

<212> DNA

<213> Coffea canephora

SEQUENCE.TXT

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ttgccgttgt attggctgtg atcttagtgg cggctatgag catggagatc acagaaagag      180
atttggcttc tgaggaaagc ttgtgggact tgtacgaaag atggaggagc catcatactg      240
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acattcaciaa ggtgaaccag aaggacaagc cttacaagct gaaactcaac agtttcgctg      360
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tttattcaga ggggtgtatac gctggagact cgtgtggcaa tgagcttgat catggcgtgg      960
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tatatatata tttcagtaga ttcatgaaat tttagttaca gactacgcgc ttctgaagac      1260
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<210> 16

<211> 359

<212> PRT

<213> Coffea canephora

<400> 16

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Met Lys Met Gly Lys Ala Phe Leu Phe Ala Val Val Leu Ala Val Ile
1           5           10           15

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SEQUENCE.TXT

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Glu Glu Ser Leu Trp Asp Leu Tyr Glu Arg Trp Arg Ser His His Thr
 35 40 45

Val Ser Arg Asp Leu Ser Glu Lys Arg Lys Arg Phe Asn Val Phe Lys
 50 55 60

Ala Asn Val His His Ile His Lys Val Asn Gln Lys Asp Lys Pro Tyr
 65 70 75 80

Lys Leu Lys Leu Asn Ser Phe Ala Asp Met Thr Asn His Glu Phe Arg
 85 90 95

Glu Phe Tyr Ser Ser Lys Val Lys His Tyr Arg Met Leu His Gly Ser
 100 105 110

Arg Ala Asn Thr Gly Phe Met His Gly Lys Thr Glu Ser Leu Pro Ala
 115 120 125

Ser Val Asp Trp Arg Lys Gln Gly Ala Val Thr Gly Val Lys Asn Gln
 130 135 140

Gly Lys Cys Gly Ser Cys Trp Ala Phe Ser Thr Val Val Gly Val Glu
 145 150 155 160

Gly Ile Asn Lys Ile Lys Thr Gly Gln Leu Val Ser Leu Ser Glu Gln
 165 170 175

Glu Leu Val Asp Cys Glu Thr Asp Asn Glu Gly Cys Asn Gly Gly Leu
 180 185 190

Met Glu Asn Ala Tyr Glu Phe Ile Lys Lys Ser Gly Gly Ile Thr Thr
 195 200 205

Glu Arg Leu Tyr Pro Tyr Lys Ala Arg Asp Gly Ser Cys Asp Ser Ser
 210 215 220

Lys Met Asn Ala Pro Ala Val Thr Ile Asp Gly His Glu Met Val Pro
 225 230 235 240

Ala Asn Asp Glu Asn Ala Leu Met Lys Ala Val Ala Asn Gln Pro Val
 245 250 255

Ser Val Ala Ile Asp Ala Ser Gly Ser Asp Met Gln Phe Tyr Ser Glu
 260 265 270

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SEQUENCE.TXT

Gly Val Tyr Ala Gly Asp Ser Cys Gly Asn Glu Leu Asp His Gly Val
275 280 285

Ala Val Val Gly Tyr Gly Thr Ala Leu Asp Gly Thr Lys Tyr Trp Ile
290 295 300

Val Lys Asn Ser Trp Gly Thr Gly Trp Gly Glu Gln Gly Tyr Ile Arg
305 310 315 320

Met Gln Arg Gly Val Asp Ala Ala Glu Gly Gly Val Cys Gly Ile Ala
325 330 335

Met Glu Ala Ser Tyr Pro Leu Lys Leu Ser Ser His Asn Pro Lys Pro
340 345 350

Ser Pro Pro Lys Asp Asp Leu
355

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